ABSTRACT

A method for detecting an edge and generating an interpolated edge pixel at a target pixel position between two lines of an interlace scan image first determines gradient intensities in the horizontal and vertical directions and then calculates the angle of the edge by comparing the gradient intensities. The interpolated pixel value is calculated from samples in the interlace scan image that lie along the identified angle and are proximate to the target pixel position. The method represents the gradient strengths and the difference between them as bit strings; locates the most significant non-zero bit in the larger gradient value; divides the value of the corresponding bit position in the difference string, and a predetermined number of following positions, by increasing powers of 2; sums the results; subtracts the sum from 1.0 and uses the inverse tangent function to calculate the angle of the edge.